Royal Docks Business School

UEL University of East London

MKM227 Postgraduate Dissertation

Student Number: 0941699

	Comments	Max Mark	Actual Mark
Introduction *Identification of a valid topic, research question and objectives framed to Masters Level standard with academic rationale developed, clear industry contextualisation of the research topic*	**Supervisor Comments:**	**10%**	
	2nd marker Comments:		
Critical Literature Review *Depth and breadth of literature search, engagement with seminal authors and papers, evidence of a critical approach toward the scholarly literature*	**Supervisor Comments:**	**25%**	
	2nd marker Comments:		

<table>
<tr><td rowspan="2">Research Methodology

Evaluation of research philosophies and perspectives. Justification of methodological approach, sampling strategy, data analysis and reliability and validity measures as applicable</td><td>Supervisor Comments:</td><td rowspan="2">15%</td><td></td></tr>
<tr><td>2nd marker Comments:</td><td></td></tr>
<tr><td rowspan="2">Data Analysis and Interpretation

Evidence of rigor in data analysis and interpretation procedures, identification of key patterns and themes in the research data, integration of academic theory into explanation of findings</td><td>Supervisor Comments:</td><td rowspan="2">35%</td><td></td></tr>
<tr><td>2nd marker Comments:</td><td></td></tr>
</table>

Conclusions and Recommendations *Research question and objectives addressed with implications to theoretical and managerial concepts considered. Recommendations provided for theory, practice and future research*	**Supervisor Comments:**	**10%**	
	2nd marker Comments:		
Organisation, presentation and references. *Well structured and ordered dissertation with correct use of grammar and syntax. In-text citation and bibliography conforming to "Cite Them Right"*	**Supervisor Comments:**	**5%**	
	2nd marker Comments:		

<table>
<tr><td rowspan="2">Total</td><td>First Marker Total</td><td rowspan="2">100%</td><td></td></tr>
<tr><td>Second Marker Total</td><td></td></tr>
<tr><td colspan="2">Supervisor General Comments:</td><td colspan="2" rowspan="2">Agreed Mark:</td></tr>
<tr><td colspan="2">2nd Marker General Comments:</td></tr>
</table>

Supervisor's Name: …….. **Signature: ……**

2nd Marker's Name: …… **Signature: ……**

ESG Disclosure, Corporate Governance and Firm Performance:

Empirical evidence from UK, France, Germany, Japan and US markets 2008-2012.

A dissertation submitted in partial fulfilment of the requirements of the Royal Docks Business School, University of East London for the degree of **Msc Finance and Risk**

May 2014

Word count: 14186

I declare that no material contained in the thesis has been used in any other submission for an academic award

Student Number: U0941699 Date: 11/05/2014

Dissertation Deposit Agreement

Libraries and Learning Services at UEL is compiling a collection of dissertations identified by academic staff as being of high quality. These dissertations will be included on ROAR the UEL Institutional Repository as examples for other students following the same courses in the future, and as a showcase of the best student work produced at UEL.

This Agreement details the permission we seek from you as the author to make your dissertation available. It allows UEL to add it to ROAR and make it available to others. You can choose whether you only want the dissertation seen by other students and staff at UEL ("Closed Access") or by everyone worldwide ("Open Access").

I DECLARE AS FOLLOWS:

- That I am the author and owner of the copyright in the Work and grant the University of East London a licence to make available the Work in digitised format through the Institutional Repository for the purposes of non-commercial research, private study, criticism, review and news reporting, illustration for teaching, and/or other educational purposes in electronic or print form
- That if my dissertation does include any substantial subsidiary material owned by third-party copyright holders, I have sought and obtained permission to include it in any version of my Work available in digital format via a stand-alone device or a communications network and that this permission encompasses the rights that I have granted to the University of East London.
- That I grant a non-exclusive licence to the University of East London and the user of the Work through this agreement. I retain all rights in the Work including my moral right to be identified as the author.
- That I agree for a relevant academic to nominate my Work for adding to ROAR if it meets their criteria for inclusion, but understand that only a few dissertations are selected.
- That if the repository administrators encounter problems with any digital file I supply, the administrators may change the format of the file. I also agree that the Institutional Repository administrators may, without changing content, migrate the Work to any medium or format for the purpose of future preservation and accessibility.
- That I have exercised reasonable care to ensure that the Work is original, and does not to the best of my knowledge break any UK law, infringe any third party's copyright or other Intellectual Property Right, or contain any confidential material.
- That I understand that the University of East London does not have any obligation to take legal action on behalf of myself, or other rights holders, in the event of infringement of intellectual property rights, breach of contract or of any other right, in the Work.

I FURTHER DECLARE:

- That I can choose to declare my Work "Open Access", available to anyone worldwide using ROAR without barriers and that files will also be available to automated agents, and may be searched and copied by text mining and plagiarism detection software.
- That if I do not choose the Open Access option, the Work will only be available for use by accredited UEL staff and students for a limited period of time.

/cont

Dissertation Details

Field Name	**Details to complete**
Title of thesis *Full title, including any subtitle*	ESG Disclosure, Corporate Governance and Firm Performance: Empirical evidence from UK, France, Germany, Japan and US markets 2008-2012.
Author *Separate the surname (family name) from the forenames, given names or initials with a comma, e.g. Smith, Andrew J.*	Mcphail, James
Supervisor(s)/advisor *Format as for author.*	Dr Peiyi Yu
Author Affiliation *Name of school where you were based*	Royal Dock Business School
Qualification name *E.g. MA, MSc, MRes, PGDip*	Msc
Course Title *The title of the course e.g.*	Finance and Risk
Date of Dissertation *Date submitted in format: YYYY-MM*	2014-05
Do you want to make the dissertation Open Access (on the public web) or Closed Access (for UEL users only)?	Open ✔ Closed

By returning this form electronically from a recognised UEL email address or UEL network system, I grant UEL the deposit agreement detailed above. I understand inclusion on and removal from ROAR is at UEL's discretion.

Name:

Signature: *James Mcphail* Date: 11/05/2014

ESG Disclosure, Corporate Governance and Firm Performance:

Empirical evidence from UK, France, Germany, Japan and US markets (2008-2012)

Royal Docks Business School

Postgraduate Dissertation

MKM227

U0941699

Word count: 14186

13th May 2014

Abstract

The reason of this research is to understand the relationship between non-financial factors such as corporate governance and ESG disclosure, and a firm's financial performance.

There have been lots of research based on the connection between the organisation corporate governance and their financial performance. However these have found mixed result that warranted further research. There has been a growing interest in ESG information becoming more important to investors, creating the need for better disclosure practises. This research will look at how ESG disclosure is connected to the performance of a firm.

This paper used regression analysis to determine if there was any correlation between the variables. The data used was from five different markets over five years, giving 4480 observations. The study found that there is a positive connection between the ESG disclosure score and ROA, ROE and ROC, however negative for TobinQ. There was also a negative correlation to firm performance from board size and meeting per year, while a positive correlation with the percentage of independent directors. This research heights the importance of considering the effects of corporate governance and ESG disclosure, where corporations, investors and stakeholder are considering future performance and sustainability.

Acknowledgment

I would like to thank my dissertation supervisor Dr Peiyi Yu for the support and the guidance that she provided for this research. I would also like to thank my fiancée Holly for all her encouragement and support throughout this master's degree.

Table of Contents

List of Tables

List of figures

Chapter 1: Introduction

This dissertation aims to analyse non-financial factors that affect a company's performance, specifically focusing on corporate governance and the levels of ESG (environment, social and governance) disclosure. Investors are continually looking for indicators that they can use to predict the financial performance of an organisation. The modern investor is risk adverse, wanting the highest return for the lowest level of risk. This means that they are analysing not just the financial information but non-financial, such as corporate governance or ESG performance. This information is used to analyse a company's financial performance and sustainability, this has been an area of focus since the recent financial crisis.

The structure of this dissertation has been designed to efficiently develop the research objectives, creating and testing hypothesises based on the previous research. This will first focus on critically reviewing the literature on corporate governance, ESG, voluntary disclosure, ownership and firm performance. Then from the literature review I will develop multiple hypotheses that reflect the gaps in the previous research. The methodology will then explain how the research was carried out, including the regression models, analysis tools and methods used in the research.

The analysis of the results will then revealing the connections between the variable, allowing for the possible supporting of my hypothesis. This will then be compared with the results from previous research, to identify similarities or conflicting arguments. Then summarise the conclusion of the research, recommendations and further research.

1.1: Background of Situation

In the recent years, the world's financial markets have witnessed the introduction of environmental, social and governance (ESG) factors as potentially key factors for the investment decision making process (Bianchi *et al.*, 2010). The ESG of a company has become increasingly important to investors, considering the potential financial impact from these non-financial performances. ESG is currently a popular topic in literature, it can be used to analysis how ethically a company is run, and this is becoming more important for the ethical investor. Investors are looking for more than just profits they are looking for an ethical investment avoiding the "sin" stocks. Responsible investing has been defined within the realms of socially responsible investing, ethical investments and corporate social performance (Bianchi *et al.*, 2010).

This paper will be looking at the Bloomberg disclosure score, which does not reflect the company's levels of ESG performance but the level at which they disclose information about ESG. This could be a good indication of the structure of the company and potential future performance. The ownership can be a critical factor when considering this voluntary disclosure, determining the focus and the level of regulation. Government, pension and insurance owned companies will be more heavily regulated and so in turn should return a higher ESG disclosure score.

There is also a increasing interest in the corporate governance and how this influences the sustainability and financial performance of a company. The corporate governance system controls how a company is directed and controlled, influencing the company's ability to meet its objectives. This is defined by Shleifer and Vishny (1997) as a way that investors in the company can have confidence that they will get a return on their investment. There is a larger portion of the prior literature on the relationship between corporate governance and company performance that documents a significantly positive association between corporate governance and firm value (e.g., Chaghadari

and Chaleshtori, 2011; Ammann *et al.*, 2011). However the results for the individual characteristics of governance have mixed results.

An important part of corporate governance is the board of directors. The principle role of a board of directors is to represent the shareholder's needs, ensuring that the organisation operates in their best interests. They are a crucial part of a company, developing the management system that reflects the company's corporate governance goals. The directors can be put into two categories executive directors and independent directors. This paper will be looking at multiple factors such as board size, number of board meetings and percentage of independent directors. Analysing how these variables influence the performance of a company and also the ESG disclosure.

There is a large amount of research into different determinates of firm performance, for example research by Ammann, Oesch, and Schmid (2011), Brown and Caylor (2009), Chaghadari and Chaleshtori, (2011). They compare the different corporate governance characteristic or voluntary disclosure to performance indicators such as ROA, ROE and TobinQ. There is a large mixture of results, some finding positive, negative or no correlation between variable. There are many studies find that firm performance is negatively related to board size and positively to percentage of independent directors, while others present contradicting evidence.

For Example, the research by Fooladi (2012) compared corporate governance with firm performance using factors such as board size and independent director, but found no significant correlation. Their research shows that there should be a correlation, but their paper was unable to find a significant result.

This research will be similar to Fooladi (2012) looking at board characteristics such as independence and board size, however I will be including other factors such as ESG disclosure, similar to Eng and Mak (2003) that compared corporate governance and firm performance with company voluntary disclosure. Then using a larger sample of companies from multiple markets,

and carefully selected analysis techniques, hopefully expand upon the previous research.

1.2: Justification for Research

This research will be expanding on the current literature, by including the ESG disclosure variable and analysing a different data set. This will further research the mixed finding in the connection between corporate governance and performance. Testing the hypothesis questions designed within this paper to develop evidence to supporting my research objectives.

This large data set will be collected from five markets the UK, Germany, France, Japan and the US with 4480 observations. The factors that I will be considering are percentage of independent directors, board size, firm size (Market Capitalisation), board meetings, ownership and ESG disclosure. I will collect all the information from Bloomberg, and using panel data analyse run regressions to determine if there is any correlation between the different factors and the firm performance. I will then use relevant theory to explain my findings, and explain why they are correlated to the performance.

There are many factors that influence a firm's performance both financial and non-financial, which can have a positive or negative effect. The objective of this dissertation is to analyse the data to determine the correlation between independent directors, board size, ownership, ESG disclosure and the firm performance. Eccles *et al*. (2011) analysed the U.S. market interest in non-financial information, finding the top five were ESG disclosure score, board size, the number of Board Meetings per year and percentage of independent directors. These factors are important non-financial factors that I believe have a strong connection to the company's performance.

1.3: Research Objectives

1. Determine if there is any correlation between the ESG disclosure score and the firm's performance.

2. Determine if board size, board meeting and independent directors are connected to the firm's performance.

3. Determine if there is any connection between ownership and ESG disclosure score.

4. Determine if there is any connection between independent directors and ESG disclosure score.

5. Determine if there is any connection between board size and ESG disclosure score.

6. Test the hypothesis against a large panel data set, from the UK, France, Germany, Japan and the US.

Chapter 2: Critical Literature Review

This chapter will discuss and review the relevant literature to this dissertation research. There has been many studies in the UK, US, Asia and Europe researching the connection between firm's ownership, board size, voluntary disclosure, percentage of independent directors and how they relate to the firm's performance (Ho and Tower, 2011; Habbash *et al.*, 2014). These are non-financial factors that could reflect a firm's future performance by indicating an effective management structure and efficient cash flows.

The previous research on corporate governance has found varied results for the connection between board independency, board size and firm performance, reviewed in section 2.1. These findings show that there is a need for further research in this area, broadening the research scope to include other variables and different samples.

The world's financial market has had an increasing interest in company transparency about ESG performance and policies, this transparency can be demonstrated by the Bloomberg disclosure scores (Eccles *et al.*, 2011). This area of study is new and has not been full researched, however there has been lots of research in voluntary disclosure and ESG performance but there is little research focused on ESG disclosure.

All the variables of a firm are affected by the ownership, from the corporate governance to the disclosure of information. This will need to be considered as it could have a strong connection to the considered variables. Which performance measures are most appropriate will also be crucial to the findings. This review of current literature will reveal the expected connection between the variables and allow the creation of the theoretical model.

2.1: Corporate governance

The corporate governance of a company is an important role in the development of the management structure, improving cash flow and reducing the cost of capital. Corporate governance is defined by Dalei *et al.* (2012, p.196) as the " way of bringing the interests of investors and managers into line and ensuring that firms are run for the benefit of investors". This demonstrates how important a company's approach to corporate governance can be to the owners, or potential investors reflecting the firms risk and potential future earnings.

The majority of the prior literature on the connection between company performance and corporate governance demonstrates that better corporate governance can be associated with a better company performance. Tian and Twite (2011) discuss the increasing amount of empirical literature on the connection between corporate governance and firm performance, and how investors interpret this connection. An example of this connection, Brown and Caylor (2009) found that in the U.S. better governed firms have superior ROE, ROA and Tobin's Q. The implementation of a good corporate governance structure can have a positive effect on the firm's performance. However the company may need to consider if the financial cost outweigh the benefits associated in the implementation of effective governance system.

The quality of a company's corporate governance has been proven as an effective method to prevent management opportunistic behaviour; which can then improve the financial performance (Habbash *et al.*, 2014). While Black *et al*. (2006) claimed that there is no strong evidence that better governed firms are more profitable. Whereas Ammanna *et al*. (2011) research results found that good corporate governance practices are reflected in a company's notably high market value.

The main empirical research of corporate governance use similar variables to characterise how well the corporate governance is implemented. Tian and Twite (2011) suggest the main four are; managerial compensation,

shareholders rights, ownership structure and board characteristics. Whereas Chaghadari and Chaleshtori (2011) decide on CEO duality, independency of the board, board size and ownership structure. The research by Eccles *et al*. (2011) found the board characteristics that the U.S. investors were most interested were the number of board meetings per year, board size and the percentage of independent directors.

An important element of corporate governance was the introduction of the board of directors, as they align the managers and the interests of shareholders, reducing the separation of ownership and control (Habbash *et al*., 2014). There are multiple board characteristics that can be considered, the literature has identified a focus on the board size and percentage of independent directors. There is a range of research into the connection between board characteristics and firm value or performance, with some conflicting views.

2.1.1 Independent directors

The board of directors is considered to be a crucial instrument for supervising the organisations management, so the independency of board members has become a much debated issue. An independent director is a member of a board of directors that do not have any financial association with the company, so they do not own shares in the company (Eng and Mak, 2003). Fama and Jensen (1983) explain how independent or outside directors will have the incentive for showing expert decision control as they are developing reputation, leading to improved supervision and governance. An example, Zubaidah (2009) research argues that the board with more independent directors can better control any opportunistic behaviour of managers, this will protect the shareholders' interests much better than a board with more dependent members.

The current trend for most organisations is to have a majority of independent directors, and an increasing number have only one or two inside directors

(Crespí-Cladera and Pascual-Fuster, 2013). This reflects the conventional wisdom that only independent directors can be effective at monitoring management, one of the principal roles of the board (Bhagat and Black, 2001). The better supervision should help better align the objectives of the management and the investors improving the performance. The research by Borokhovich *et al*. (1996) supports this finding that more board independence can improve performance and value.

The literature debates the relationship between the percentage of independent directors and a firm's performance, with arguments for positive, negative or no correlation (Yasser *et al*., 2011). The empirical results are surprisingly mixed, for instance Sami *et al*. (2011), Bonn (2004), Cho and Rui (2007) found that there is a significant positive relationship between the percentage of independent directors and firm performance. While Fooladi (2011) and Malik (2012) found no significant relationship between independent directors, however they were expecting to find a positive relationship from their research in the literature. Whereas Bhagat and Black, (2001) and Bhagat and Bolton (2008) found a practically strong inverse correlation between board independence and firm performance. This challenges the conventional wisdom about independent directors.

The complex mixed findings suggest that independent directors are a good measure of corporate governance, but can this reflect financial performance. The research by Crespí-Cladera and Pascual-Fuster (2013) investigates the importance of the level of independence of independent directors. This could explain why the results are so mixed, as in some of the observations might have high percentage of independent directors but how independent are they. This could be included in further research to expand the findings.

2.1.2 Board size

There has been lots of research into the influence of the board size on a corporate financial performance. The papers by Guest (2009), Cater *et al.* (2003) found a negative connection between board size and financial performance, meaning that larger boards can have a negative effect on firm performance. Jensen (1993) explains that keeping boards small helps to improve the performance, keeping them less than eight members helps the CEO control them that should have a positive impact on financial performance.

The literature discusses two main sources of the effect of board size, as the group size increases the board control management decreases and problems develop in communication and coordination (Jensen, 1993; Yermack, 1996; Eisenberg *et al.,* 1998). Researchers in many disciplines have explored the effect of group size on group performance, finding larger groups find it harder to come to a collective decision, with reduced communication and coordination. This can then be reflected in the board room environment, with the CEO trying to lead the group, so larger groups will find it harder to meet an optimum decision (Jensen, 1993).

There are lots of examples of empirical evidence that support the board size effect, with multiple studies showing a significantly negative relationship between board size and firm performance. The regression results from Guest (2009) show a significant negative relationship between firm board size and profitability, the larger boards appear to have lower TOBINQ. The results of Cater *et al*. (2003) also showed a significantly negative correlation between board size and TOBINQ. However Bermig and Frick (2010) found insignificant coefficients of board size with ROC and ROE but a positive with TobinQ, suggesting that it is completely irrelevant in this respect.

The general findings are that smaller boards around seven to nine have a higher performance. Jensen (1993) recommends board size of seven or eight directors, whilst Lipton and Lorsch (1992) argues that eight or nine is the best possible board size. Some researchers have challenged these arguments,

finding that performance of more complex organisations increases with increased board size (Coles *et al.*, 2008).

The main characteristics of corporate governance this paper will be analysing are board size and percentage of independent directors. The literature has revealed mixed result for the correlation between the characteristics and performance, showing that the area could be further researched. I will be looking to see if there is a correlation between the board size, independent directors and firm performance. Table 2.1 below shows the different results of the authors.

Table 2.1.1 Author findings

	Correlation	Authors
Independent Directors (more independence)	Positive	Borokhovich *et al*. (1996) Sami *et al*. (2011) Bonn (2004) Cho and Rui (2007)
	None	Malik (2012) Chaghadari and Chaleshtori (2011) Fooladi (2011)
	Negative	Bhagat and Black, (2001) Bhagat and Bolton (2008)
Board Size (larger boards)	Positive	Coles *et al*. (2008) For complex firms
	None	Fooladi (2011) Bermig and Frick (2010) Chaghadari and Chaleshtori (2011)
	Negative	Cater *et al*. (2003) Guest (2009) Tian and Twite (2011)

2.2: ESG and Voluntary Disclose

The voluntary reporting of environmental, social and governance (ESG) is used to describe the formal corporate reporting that is extra to the published financial reports that are required by their accounting standards. There is an increasing amount of firms that have started to voluntarily publish there ESG performance in standalone reports (Murphy and McGrath, 2013). This indicates that corporations have recognised the importance of voluntarily disclosing their ESG performances.

2.2.1 Environmental, Social and Governance Disclosure

The global financial markets have been moving towards investment models that incorporate environmental and social dimensions (Cadman, 2011). The ESG disclosure score represents the amount of environmental, social and governance data that is voluntarily disclosed by the company. ESG disclosure is an important variable because it helps a company demonstrate that it is managing its risks and has a track record of monitoring its ESG performance. Koehler and Hespenheide (2013) did research to see if there is evidence that ESG information matters to investors, finding companies disclosing more ESG information are more likely to enjoy a lower cost of capital.

Companies approach ESG are reporting their performance in a variety of different ways, making it hard for comparison this is why they need a regulated unified measure of ESG performance (Koehler and Hespenheide, 2013). The concept of ESG disclosure allows the investor access to additional relevant information about the companies ESG performance, enabling investors to better understand the risks and opportunities (Bassen and Kovacs, 2008). There have been many examples of corporate problems that relate to ESG issues, including fraud, corruption, environmental accidents and health and safety failures (Peiris and Evans, 2010). These can arise due to the management pursuing their own interests, not those of the stakeholders.

Previous research into ESG has shown the industry specific nature, with some industries having high ESG and high returns, and others having low ESG high

returns (Manescu, 2011). When Bloomberg is calculating its ESG disclosure scores it takes into account the industry as it is a strong influence to the types and levels of disclosure (Bloomberg, 2014).s

There is an increasing market interest in the level of a corporate transparency about its ESG performance and policies. These can be reported using annual reports or addition ESG reports that are available on research platforms like Bloomberg. Young (2013) researched institutional investor's behaviour towards responsible investment in connection to ESG performance showing the need for better disclosure. The increasing investor curiosity about corporate social responsibility and the growing interest in companies ESG disclosure scores suggests an increasing number of investors using ESG transparency as a proxy for the management's efficiency and transparency (Eccles *et al.*, 2011). There is also a strong connection between the evolution responsible investment and the ESG and sustainable development of a company (Cadman, 2011).

The ESG information can help responsible investors make more informed decisions, so they will look at companies that disclose more information as they will be easily analysed. Hong and Kacperczyk (2009) researched the investment in the sector of sin stocks, which are publicly traded companies involved in the production of alcohol, tobacco and gambling finding their earnings are statistically significant excess return. These stocks can have abnormally high returns but can have negative ESG performance, and avoided by ethical investor (Cadman, 2011). This could reflect the different percentages of ownership. For example government, pensions and insurance companies will avoid investing 'sin' stocks, whereas some investors will seek higher returns regardless of responsible investing.

The question is can the Bloomberg ESG discloser score be used as a valid indicator that reflects the firms performance? The investors can use both financial and non-financial information, this can also reflects the investors need for the ethical investor. Recent investment practices are becoming more concerned with ESG information, with the need for more socially responsible

investing (Manescu, 2011). Some authors argue that ethical portfolios tend to underperform over the long term due to a lack of diversification (Markowitz, 1952). An opposite view is that ethical investment has a positive impact on the bottom line of an organisation and market performance (Abramson and Chung, 2000).

Companies are developing better ESG disclosure; this could be because they have started to see advantages such as reputation and protection or this could be improved regulations. Murphy and McGrath (2013) argued in their research that some of the motivation for corporations to improve ESG reporting and disclosures is to avoid the risk of lawsuit or class actions that can have severe financial penalties. Government ownership will have restriction for companies that will mandate the levels of ESG and disclosure whereas individual investors might not have as strong restrictions, as they could be more interested in the financial performance.

The main challenge with mainstreaming ESG information is that investors perceive them as complex and difficult to integrate into investment decisions. The complexity involved with the inconsistency and insufficiencies of ESG disclosure has moved to investors treating them as compliance rather than the ESG material factors (IFAC, 2012). The ESG disclosure score could be used to illustrate to investors the level of corporate compliance that could reflect possible future sustainability and performance. A positive ESG reputation can provide protection, for when things go wrong, preventing drops in shareholder value, with disclosure of ESG performance information providing good company transparency (Koehler and Hespenheide, 2013). There is also Cadman (2011) that follows the assumptions that the accountability, transparency and ESG disclosure are just part of responsible corporate and financial behaviour.

2.2.2 Voluntary Disclosure

Modern investors are risk adverse and want to diversify their portfolio gaining the highest return at lowest risk. They are looking for more information when analysing investment options, including financial and non-financial. The type of information that is disclosed or not disclosed can also be an indicator to investors, although some is a legal requirement some is voluntary. For example the level of voluntary disclosure by companies in China has received considerable attention in the accounting literature especially since the 1997 Asian financial crisis (Ho and Tower, 2011). Some research has found companies that have more voluntary disclosures tend to produce a better stock price compared to the future earnings of the company (García-Meca and Sánchez-Ballesta, 2010).

Voluntary disclosure has a strong connection to research in corporate governance and ownership, but the opinions on the connection are mixed**.** Eng and Mak (2003) researched whether corporate governance is correlated to voluntary disclosure, with a focus on the connection between board composition, ownership structure, government ownership and voluntary disclosure. García-Meca and Sánchez-Ballesta (2010) findings showed that independent boards are associated with higher voluntary disclosure. Whereas Ho and Tower (2011) found that board independence remains to be a non-significant predictor of voluntary disclosure.

Previous studies have measured the levels of corporate disclosure by using disclosure indexes or scores that are developed to measure voluntary disclosure in company's financial statements (Eng and Mak, 2003). This paper will be doing a similar research but using the ESG disclosure score from Bloomberg to represent the transparency of the company. The voluntary disclosure of ESG information will be affected by multiple factors such as ownership, corporate governance, country and industry.

The literature on ESG and voluntary disclosure has demonstrated the need for increased levels of disclosure and the advantages and disadvantages. The

transparency of the company information can be just as important as the information it self. There has been an increase in the research of ESG, but the connection between ESG disclosure and firm performance has not been full researched.

2.3: Ownership

There is a range of research on the area of ownership and the effect on firm's management and performance. For example, Greenwood and Thesmar (2011) researched the effect of ownership on the volatility of the share price and earnings. Xu and Wang (1999) explored whether the ownership structure of China's publicly listed significantly affects the performance. García-Meca and Sánchez-Ballesta (2010) looked at the association between ownership and corporate voluntary disclosure, finding that diffused ownership structure creates an incentive for the company to disclose extra information to stakeholders.

Government ownership can increases moral hazard and agency problems, however disclosure can be used to suppress these problems (Eng and Mak, 2003). Ho and Tower (2011) state that a significant shareholdings by institutional investors can help to create strong incentives to monitor corporate disclosure practices, hypothesising that the degree of voluntary disclosure is positively associated with a higher proportion of institutional ownership. Xu and Wang (1999) state that the when most the owners of a company are corporations TobinQ is higher, whereas when mostly individual owners the TobinQ the accounting profit rates are significantly lower.

The ownership of a company can affect their objectives for example individual investor want profit whereas government might have other goals. Xu and Wang (1999) explain how the government may have more political objectives rather than just maximising profit, such as improving employment or deducing inflation. There are studies finding that clashes between the government and shareholders objectives can lead to company inefficiency.

The majority of the literature on the connection between the ownership and performance look at ownership concentration, CEO ownership, shares owned by management and government ownership (Demsetz, and Villalonga, 2001; Xu and Wang 1999). Ho and Tower (2011) addressed three ownership groups for their research family controlled, local institutional controlled, and foreign controlled. Demsetz, and Villalonga (2001) used the percentage owned by the five largest shareholders and the percentage of shares owned by the management, Whereas Xu and Wang (1999) used the ownership mix and concentration for their ownership measures.

This research will be different as I will be using the percentages of ownership for five different types of owner: Government, Advisor, Pension, Insurance and Individual. This should provide more information on the effect of different types of ownership structures on performance.

2.4: Measuring Firm Performance

There are multiple Indicators used to reflect the firm's performance, each linked to different parts of the financial operation or successes of the company. Previous empirical research on the subject of corporate governance use either accounting based or market based measure to indicate the firm performance (Chaghadari and Chaleshtori, 2011). The book value measures ROA and ROE these are frequently used for short term measures of operating performance, whereas the market value to book value measure Tobin's Q is the widely used for the long term indicator for firm valuation. Tobin's Q is connected to the market so is influenced by investors psychology and interpretation of forecasting world events and business strategies.

Ammann *et al.* (2011) use the TobinQ performance measure in there research as it provides a good indication of the firm's market value. Epps & Cereola (2008) measure the operating performance of a company using the return on assets (ROA) ratio as it is demonstrates the level of earning that has been generated from the invested assets. Brown and Caylor (2009) and Chaghadari and Chaleshtori (2011) use ROA and ROE to access how well the company's

corporate governance is at successfully controlling the management, to effectively gain a higher return on invested assets. Sami *et al*. (2011) uses ROA, ROE and TobinQ, whereas Cho and Rui (2007) just use TobinQ.

Table 2.4.1 Different measures

	Performance Measure			
Authors	**ROA**	**ROE**	**ROC**	**TobinQ**
Brown and Caylor (2009)	✔	✔		✔
Chaghadari and Chaleshtori (2011)	✔	✔		
Sami *et al*. (2011)	✔	✔		✔
Cho and Rui (2007)				✔
Bhagat and Bolton (2008)	✔			✔
Bermig and Frick (2010)		✔	✔	✔
Guest (2009)	✔			✔
Tian and Twite (2011)	✔			✔
Ammann *et al*. (2011)				✔

The previous research demonstrates a range of performance measures that can be used to test against corporate governance. The main measures that are used are TobinQ and ROA with some using ROE, However only one author from my research used return on capital. This is interesting as previous authors have been focused on return on assets, equity and market to book value not the return on capital invested.

In this paper, I extend the current literature by using a larger sample of more recent data and testing against four different performance measures ROA, ROC, ROE and Tobin's Q. This should produce findings that will contribute to the current literature.

Chapter 3: Theoretical Orientation and Research

3.1: Methodology

This chapter will discuss the research methodology, also a reviews panel data and regression analysis then developing the research hypothesis model. This dissertation will be similar to other research on the connection between firm performance and corporate governance; however I will be looking at two main areas, ESG disclosure and corporate governance. This analyse will involve collecting a relevant panel of variables then using analysis software running multi-linier regressions, this will reveal any correlations. The results from the regressions will then be analysed and interpreted relating to the previous literature, to test the hypothesis and find recommendations.

This research will be using secondary data for a quantitative empirical analysis. The reason for using secondary quantitative data is because it is the only way to possibly gather this amount of data needed for this statistical analysis. This research will use multi-dimensional panel data, both time series and cross sectional, over a five year period for 896 companies. This data will then be analysed using Eview 7, a statistical package used for time-series econometric analysis. This will allow me to test the regression models on the sample data.

The data was collected from the Bloomberg terminal, using excel to download the data into the model so that it can be entered into the regression software easily. The data was downloaded from Bloomberg using excel because it is the most accurate and convenient way to collect the 4480 observations. The data should be reliable as it was collect form a secondary source Bloomberg, this will reduce the chances of getting incorrect results. The only limitation in collecting the data is the ownership variables, as there is no way of downloading the past years ownership percentages only the current. So this research will use the current ownership for all five years, this will reduce the accuracy but should still indicate any correlation.

3.2: Panel Data, Linear regression and Correlation Research

The data analysis section of this research will involve the comparison of quantitative data and statistics, revealing the connection between the established variables. Linear regressions analysis is a method that can be used to determine the relationship or correlation between two different variables. The use of multi-linear regressions allows us to find the connection between multiple independent variables and the dependent variable. The regression will reveal any connection between a dependent variable and the independent variables.

There are three different outcomes from the regression, positive, negative or no correlation between the variables. Positive correlation means that when one variable increases so does the other and negative correlation means that they move in opposite directions.

Panel data is used for financial modelling which comprises of both time series and cross-sectional elements, keeping the same entries and measures for some qualities over time (Brooks, 2008)

$$\boldsymbol{y_{it} = \alpha + \beta x_{it} + u_{it}}$$

Where y_{it} is the dependent variable, α is the intercept term, β is a k*1vector of the parameters to be estimated on the explanatory variables, the u represents the error term.

The use of panel data gives more useful result data with less collinearity between the different variables, generally described as being more appropriate and efficient for multidimensional analyse . Panel data is better able to identify some connections that are not noticeable in simply cross-section or time-series data analysis (Baltagi, 2005). The most common method used is known as ordinary least squares (OLS) this is the foundation of econometric model estimation.

Hypothesis Testing

In hypothesis testing analyse, there is at all times two hypotheses, they are known as the null hypothesis denoted H0 and the alternative hypothesis denoted H1. When testing a hypothesis you are actually testing the null hypothesis, the result of this will then indicate the result for the H1 hypothesis. This is because the rejection of the null hypothesis will then support the alternative hypothesis as this represents the remaining result of interest. The acceptance or rejection of a hypothesis depends on if the analysis result accepts H0 or rejects H0, acceptance of H0 means that H1 (your hypothesis) is rejected.

For example: $H0: \beta = 0.8$

$H1: \beta > 0.8$

Here the null hypothesis is that the β is equal to 0.8 is being tested against a one-sided alternative that the β is greater than 0.8.

Test of Significance

The level of significance that you choose to use reflects the level of accuracy, the standard used is less than 5% then even better the 1% significance level. This 5% significance level means that there is a 95% confidence interval. Some decide to use the 5% but a potential problem is that if the sample size is sufficiently large any null hypothesis can be rejected. This can be over looked in some empirical works this is why some econometricians suggest the 1% to be used on larger samples (Brook, 2008). This is why my research will be looking at both the 5% and 1%, as I have a large sample size.

Figure 1 shows the rejection regions for a one sided 5% hypothesis test. If the result of the regression has a probability less than the 5% then the null hypothesis is rejected at the 5% level. The rejection of the null hypothesis result at this level would be 'statistically significant'. If the null hypothesis is not rejected, it would be said that the result of the test is 'not significant', or you could say it is 'insignificant' (Brooks, 2008).

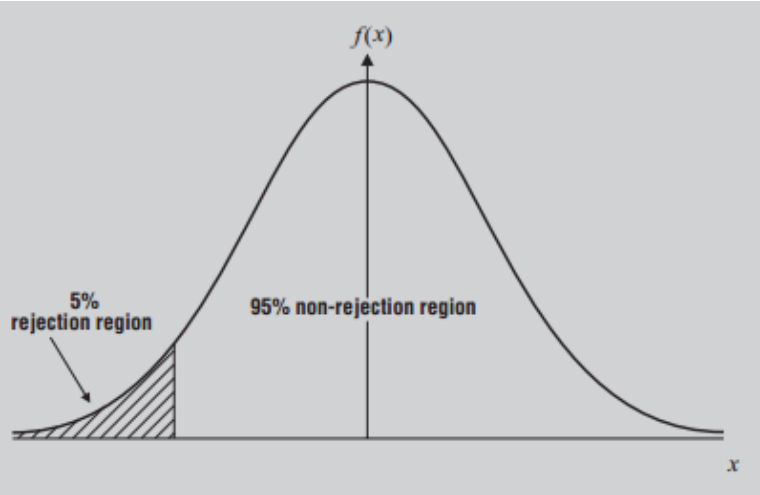


Figure 1 (Brooks, 2008, pp. 57)

Correlation Coefficientf

The correlation coefficient can indicate an association between two variables, but does not explain the relationship between then. Thus if we state that x and z are correlated, this does not imply that changes in z cause changes x, or x causes changes in z. There is just evidence that there is a linear relationship between x and z, and their movements are on average related by the amount represented by the correlation coefficient (Brooks, 2008). This needs to be considered when analysing the results, as we will be able to see if the variables are connected but are unable to identify how they influence each other. For example does ESG affect the firm's performance or does the firm's performance affect the ESG.

Balance and Unbalanced Data

The distinction should be made to decide whether panel data is balanced or unbalanced. A balanced panel has the same number of time-series observations for each of the cross sectional units. An unbalanced panel will have less observations for some of the cross sectional elements. Incomplete panels are more likely to be the norm in typical economic empirical situations (Baltagi, 2005). This research will be an unbalanced panel as some of the data will be missing because it is unavailable. This will be automatically accounted for by the software package when running the analysis.

Fixed Effects and Random Effect

The ordinary least squares (OLS) is the simplest estimation model used in the regression analysis. There are two further approaches to panel estimators that are used in financial research, the fixed effect models and random effect models. In fact, the fixed versus random effects issue has caused lots of debates in the statistics literature and also the panel data econometrics literature (Baltagi, 2005). The fixed effect model is the simplest, allowing the intercept in the model move on the cross-section but not over time, with the slope estimates are fixed for over time and cross-section.

The random effect model the same as the fixed effect approach proposes different intercept terms for each entity that are constant over time. However, the random effect model has the intercept for each of the cross-sectional unit is assumed to come from a common α (Brook, 2008). The common intercept is the same for all cross-sections and over time.

The likelihood test for fixed effects is done this will then show if the panel data approach or OLS is the most appropriate. Then the Hausman test can be used to test if the fixed effect or random effect model is the most appropriate for the model.

OLS, Fixed or Random Effect Tests

When completing the regressions the option for OLS, fixed or random need to be determined this is done using the Likelihood ratio test and Hausman test for random effects

The Likelihood ratio is a test to determine whether to use an OLS model or the panel data approach. For example below are the results from a fixed effect test. The fixed effect test result has a *p*-value less than 1% indicating that we reject the null hypothesis H0 and accept H1 panel data approach, fixed and random effect. If this null hypothesis is not rejected, the data can simply be pooled together and OLS employed. The next step will be to do the Hausman test.

Table 3.2.1 Example likelihood Test

Redundant Fixed Effects Tests Equation: FIRMEQ1ROA Test period fixed effects			
Effects Test	Statistic	d.f.	Prob.
Period F	4.674187	(4,1949)	0.0009
Period Chi-square	18.789036	4	0.0009

The specification test was proposed by Hausman in 1978, this test was based on the difference between the fixed and random effects estimators (Baltagi, 2005). Hausman test is a statistical hypothesis test that is used to differentiate between which model to use from the random effect or fixed effect.

This is demonstrated below, testing a random effect model and see if it passes the Hausman test for random effects being uncorrelated with explanatory variables. If the *p*- value is less than 1% this will indicate that the fixed effect model is not appropriate then run the test for the fixed effect model.

Table 3.2.2 Example Hausman Test

Correlated Random Effects - Hausman Test Equation: ESGALL Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	44.188418	10	0.0000

Multicollinearity

When using OLS estimation method there is an assumption that is made that the explanatory variables are not correlated with each other. Multicollinearity occurs when there is a strong correlation between two or more of the variable (Brooks, 2008). The Pearson Correlation will show the coefficients between each of the variables, indicating any significant correlations between the independent variables. If there is a non-negligible relationship between two or more of the explanatory variables this is called near multicollinearity. When this happens it can cause the regression to become very sensitive to small changes in the model, so adding or removing explanatory variables can lead to large changes in the significance and the coefficients (Brooks, 2008).

3.3: Research Hypothesis Model Specification

The literature review has provided multiple possible research ideas. This research will look at the relationship between multiple different variables and firm performance and ESG disclosure, they are hypothesized as follows:

H1: There is a positive relationship between ESG disclosure score and the firm performance.

H2: There is a negative relationship between the board size, board meetings and the firm performance.

H3: There is a positive relationship between percentage of independent directors and the firm performance.

H4: There is a relationship between the ownership and the ESG disclosure scores.

H5: There is a relationship between the percentage of Independent directors and the ESG disclosure scores.

H6: There is a relationship between the board size and the ESG disclosure scores.

This research will look at different factors that could possibly have a correlation to a firm's performance. I will be focusing corporate governance, ownership and ESG Disclosure scores, the variables associated with these factors should have a strong influence on a company's performance.

I will be using a statistical method widely used in social science, panel data analysis. This is data collected over time then using a model similar to the one below to run regressions this will allow us to find the results.

$$\boldsymbol{y = a + bX + cX + dX}$$

First test

$$\boldsymbol{ESG\ Disclosure = Corperate\ Governance + Firm\ Perfformace + Ownership}$$

Then test

$$\boldsymbol{Firm\ Performance = Corperate\ Governance + ESG\ Disclosure + Ownership}$$

ESG Disclosure, Corporate Governance and Firm Performance:

Empirical evidence from UK, France, Germany, Japan and US markets 2008-2012.

The Test Equations: OLS Regressions

$$ESG_{it} = \alpha + ROA_{it} + Country_{it} + Industry_{it} + leverage_{it} + lnmktcap_{it} + pctindepdirector_{it} + Boardsize_{it} + Boardm_{it} + Indepatt_{it} + Govo_{it} + Advo_{it} + Peo_{it} + Inso_{it} + Individualo_{it}$$

$$ESG_{it} = \alpha + + ROC_{it} + Country_{it} + Industry_{it} + leverage_{it} + lnmktcap_{it} + pctindepdirector_{it} + Boardsize_{it} + Boardm_{it} + Indepatt_{it} + Govo_{it} + Advo_{it} + Peo_{it} + Inso_{it} + Individualo_{it}$$

$$ESG_{it} = \alpha + ROE_{it} + + Country_{it} + Industry_{it} + leverage_{it} + lnmktcap_{it} + pctindepdirector_{it} + Boardsize_{it} + Boardm_{it} + Indepatt_{it} + Govo_{it} + Advo_{it} + Peo_{it} + Inso_{it} + Individualo_{it}$$

$$ESG_{it} = \alpha + TobinQ_{it} + Country_{it} + Industry_{it} + leverage_{it} + lnmktcap_{it} + pctindepdirector_{it} + Boardsize_{it} + Boardm_{it} + Indepatt_{it} + Govo_{it} + Advo_{it} + Peo_{it} + Inso_{it} + Individualo_{it}$$

$$ROA_{it} = \alpha + ESG_{it} + Country_{it} + Industry_{it} + leverage_{it} + lnmktcap_{it} + pctindepdirector_{it} + Boardsize_{it} + Boardm_{it} + Indepatt_{it} + Govo_{it} + Advo_{it} + Peo_{it} + Inso_{it} + Individualo_{it}$$

$$ROE = \alpha + ESG_{it} + Country_{it} + Industry_{it} + leverage_{it} + lnmktcap_{it} + pctindepdirector_{it} + Boardsize_{it} + Boardm_{it} + Indepatt_{it} + Govo_{it} + Advo_{it} + Peo_{it} + Inso_{it} + Individualo_{it}$$

$$ROC = \alpha + ESG_{it} + Country_{it} + Industry_{it} + leverage_{it} + lnmktcap_{it} + pctindepdirector_{it} + Boardsize_{it} + Boardm_{it} + Indepatt_{it} + Govo_{it} + Advo_{it} + Peo_{it} + Inso_{it} + Individualo_{it}$$

$$TobinQ\ \alpha + ESG_{it} + Country_{it} + Industry_{it} + leverage_{it} + lnmktcap_{it} + pctindepdirector_{it} + Boardsize_{it} + Boardm_{it} + Indepatt_{it} + Govo_{it} + Advo_{it} + Peo_{it} + Inso_{it} + Individualo_{it}$$

(Company) i = 1, . . . , N; (Time)t = 1, …, T

The test equations above should provide the results needed to test the hypothesis, by determining the connection between the dependent variables and the independent variables. The literature review identified that firm performance can be measured in many different ways, so for robust testing I will use four different measures ROA, ROC, ROE and TobinQ. The equations for the ESG disclosure regressions have just one of the performance indicators in at a time, so there will be four, one for each indicator. This is done because in econometric when running regressions the variables need to be independent, however these performance indicators will be connected as they have similar traits.

The data will be downloaded and organised then imported into Eview, the statistical software package, and then check for the descriptive statistics of the data. This will show averages, min and max that can be used to identify if the data complies with your expectations. For example, you can identify the range of percentages of independent directors in the data set. The Pearson Correlation can also be used to check for multicollinearity within the variables.

When the data has been accepted, then I can start running the multiple regressions using the test equations above. The models will also need to be tested to see whether the OLS, fixed or random effect model is most appropriate. Then when the data is all finalised it will be exported individually to Excel and organised into tables together ready for analyse. The statistically significant coefficients need to be identified to the levels of significance 5% and 1%. These results will then be interpreted in connection to my hypothesises developed in this section.

Chapter 4: Results and Analysis

In this section, the relevance of the data collected for the analysis and the results from the regressions and tests are analysed. The results will be analysed along with the literature from chapter two, connecting the findings with previous research. This will then generate a better understanding of the relationship between ESG disclosure, corporate governance and firm performance.

This research has been designed to test the following hypothesis:

H1: There is a positive relationship between ESG disclosure score and the firm performance.

H2: There is a negative relationship between the board size, board meetings and the firm performance.

H3: There is a positive relationship between percentage of independent directors and the firm performance.

H4: There is a relationship between the ownership and the ESG disclosure scores.

H5: There is a relationship between the percentage of Independent directors and the ESG disclosure scores.

H6: There is a relationship between the board size and the ESG disclosure scores.

4.1: Data Collection

Secondary data was collected using the Bloomberg terminal, this was used to create the quantitative analysis of the variables. These variable were chosen based on the findings in chapter 2 and 3. I designed a model in Excel to download the data for all the tickers, using Excel formulas =BDH **(**Bloomberg Data History) and =BDP **(**Bloomberg Data Point) then formatting the data in the correct layout to enter into Eview. Appendix 1 shows a sample of the model.

The data was collected from the Bloomberg terminals using excel to gather all the relevant variables for all the companies from the five indexes, 2008-2012. This will be focusing on five markets the UK (FTSE 100), Germany (HDAX), France (**CAC 40)**, US (S & P500) and the Japan (NIKKI 225). These are all developed countries; this should prevent the influence of difference in the state of the economy on the results. I have collected 4480 observations, from the five markets over five years in this study. I will also be focusing on multiple factors that will allow for a broader range of factors, the variables are listed in the table 4.1.2 and will be comparing to the dependent variables in table 4.1.1

Tian and Twite (2011) described the board characteristics as being one of the main measures of corporate governance. So to reflect the levels of corporate governance, I will be using board characteristics such as board size, percentage of independent directors and the meetings per year. The Bloomberg's ESG disclosure score variable will be used to show the companies level of disclosure in connection with ESG, which is expected to have a correlation between the CG and firm performance.

Performance indicator

The indicators will be downloaded from Bloomberg, they use the following formulas:

Return on Assets

$$ROA = \frac{Net\ Income}{Average\ Total\ Assets}$$

Return on Equity

$$ROE = \frac{Income\ Available\ for\ Common\ Shareholders}{Average\ Common\ Equity}$$

Return on Capital

$$ROC = \frac{Net\ Income}{Average\ Total\ Capital}$$

Tobin Q

$$Tobin\ Q = \frac{Market\ Cap + Liabilities + Prefered\ Equity + Minority\ Interest}{Total\ Assets}$$

These performance indicators have been downloaded from Bloomberg pre-calculated, but these are the formula that they have used to calculate them. The reason for downloading the pre-calculated values is because this is more accurate, avoiding miscalculation but also makes it a lot easier to get the values for all the observations.

Table 4.1.1 Definition ESG and Performance Variables **(Bloomberg, 2014)**

Performance Indicators	Definition and the measurement
ROA	Return on Assets (ROA, in percentage) is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings.
ROC	Metric that measures the return that an investment generates for capital contributors. It indicates how effective a company is turning capital into profits.
TOBIN Q	Ratio of the market value of a firm to the replacement cost of the firm's assets. The Q ratio is useful for the valuation of a company. It is based in the hypothesis that in the long run the market value of a company should roughly equal the cost of replacing the company's assets.
ROE	Return on Equity (ROE, in percentage) measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.
ESG Disclosure Score	Proprietary Bloomberg score based on the extent of a company's Environmental, Social, and Governance (ESG) disclosure. The score ranges from 0.1 for companies that disclose a minimum amount of ESG data to 100 for those that disclose every data point collected by Bloomberg.

Table 4.1.2 Definition Independent Variables **(Bloomberg, 2014)**

Equation symbol	Definition
BOARDSIZE	The total number of directors on the board.
PCTINDEPDIRECTOR	The percentage of the board members that are independent directors.
BOARDM	The number of board meeting per year.
INDEPATT	Percentage of board meetings attended by independent directors during the latest period.
LNMKTCAP	The company's market capital is the total value of the issued shares; this can be used as an indicator for company size. Natural Logarithm of market capital
LEVERAGE	Indicator for leverage, the total liabilities divided by the total shareholder equity
INDUSTRY	The companies industry sector on Bloomberg, the industry sectors numbered 1-10
COUNTRY	Country Numbered 1-5
ADVO	As defined by the Investment Advisors Act of 1940, this includes any person or group that makes investment recommendations or conducts securities analysis in return for a fee, whether through direct management of client assets or via written publications. May also be referred to as a "financial advisor".
GOVO	Percentage of Government ownership
INDIVIDUALO	Percentage of Individual ownership
PEO	Percentage of pension fund ownership
INSO	Percentage of insurance company ownership

The ESG disclosure performance measures are based on Bloomberg's analysis of third-party information, which is converted into Bloomberg's scoring system. Bloomberg (2014) describe the disclosure score as follows:

"*The score ranges from 0.1 for companies that disclose a minimum amount of ESG data to 100 for those that disclose every data point collected by Bloomberg. Each data point is weighted in terms of importance, with data such as Greenhouse Gas Emissions carrying greater weight than other disclosures. The score is also tailored to different industry sectors. In this way, each company is only evaluated in terms of the data that is relevant to its industry sector*" (Bloomberg, 2014).

The dummy variables I used are for the industry and country these are just numbered 1-5 for country and 1-10 for industry. These will show that there is some relationship between the variable and the determinate but not how they are related as they are not fully reflected. The ownerships information is a percentage of the total ownership, which can be used to compare the level of ownership for each option, government, advisor, pensions, insurance and individual.

Data Collection Results

The descriptive statistic of the data collected in table 4.1.3 reveals interesting information about some of the variables. The average board size is 9.75 this is larger than some of the literature recommends; Jensen (1993) recommends seven or eight although it is closer to Lipton and Lorsch (1992) who suggest eight or nine. The average for the percentage of independent directors is 51% this is lower than the literature suggested. However they do suggest that most boards having a majority independent director on the board, the average here is just over half.

Table 4.1.3 Data descriptive statistics

	Mean	Median	Maximum	Minimum	Std. Dev.
ROA	0.046042	0.034721	0.46753	-0.58137	0.070072
ROC	0.099023	0.07469	1.347	-0.61922	0.104571
ROE	0.13989	0.113243	6.376346	-1.785789	0.235391
TOBINQ	1.692663	1.411	13.6376	0.5989	0.975708
ESG	28.98157	27.686	78.83	1.336	16.2523
COUNTRY	2.397321	1	5	1	1.718188
INDUSTRY	4.91183	4	9	1	2.616356
LEVERAGE	66.6494	25.24785	7493.973	-322.6372	257.6892
LNMKTCAP	7.902954	8.486872	12.64178	1.111997	2.413045
PCTINDEPDIRECTOR	0.5106	0.6364	0.95	0.01	0.343326
BOARDSIZE	9.748907	11	33	1	4.781243
BOARDM	8.917067	8	53	1	5.085477
INDEPATT	0.841836	0.75	1	0.4444	0.104602
GOVO	0.02152	0.01376	0.96641	0.00129	0.063167
ADVO	0.633995	0.79517	0.92713	0.0218	0.300278
PEO	0.027031	0.0242	0.12463	0.001	0.009846
INSO	0.026488	0.01358	0.79517	0.00121	0.049554
INDIVIDUALO	0.021223	0.004	0.65552	1.00E-05	0.062604

The average ESG disclosure is very low just 29 out of 100; there is a large range in scores form 1-79. This is indicates this is a good sample of companies with ESG disclosure ranging from slight to substantial. The ownership is interesting with the average government, pension, insurance and individual ownership just 2% and advisor 63%.

I completed a Pearson correlation analysis on the independent variables this will check for the degree of multicollinearity between the variables. There are no coefficients exceeding 0.8 which is a good indicator, so I have concluded that multicollinearity is not a problem in this case. If there had been any variables that were correlated then I would have to change my models to account for multicollinearity.

Table 4.1.4 Pearson Correlation

	ESG	COUNTRY	INDUSTRY	LEVERAGE	LNMKTCAP	PCTINDEP DIRECTOR	BOARDSIZE	BOARDM	INDEPATT	GOVO	ADVO	PEO	INSO	INDIVIDUALO
ESG	1													
COUNTRY	0.251	1												
INDUSTRY	-0.105	0.015	1											
LEVERAGE	0.030	0.065	-0.066	1										
LNMKTCAP	-0.005	-0.035	0.023	-0.024	1									
PCTINDEPDIRECTOR	-0.026	-0.322	0.036	-0.014	0.025	1								
BOARDSIZE	0.160	0.035	-0.016	0.048	-0.033	0.529	1							
BOARDM	0.044	0.267	0.043	0.062	-0.029	-0.128	0.045	1						
INDEPATT	0.231	0.597	-0.055	0.031	-0.018	-0.220	-0.010	0.085	1					
GOVO	0.101	0.126	0.007	-0.019	0.012	-0.007	0.080	0.039	0.089	1				
ADVO	-0.074	-0.231	-0.010	-0.029	0.069	0.080	-0.003	-0.045	-0.176	0.020	1			
PEO	0.056	0.022	0.065	0.038	-0.047	0.013	0.035	0.010	0.046	-0.077	0.099	1		
INSO	0.084	0.130	-0.052	-0.006	-0.054	-0.074	0.017	0.064	0.045	-0.013	0.025	-0.163	1	
INDIVIDUALO	-0.180	-0.137	0.005	-0.044	0.022	0.071	-0.043	-0.091	-0.120	-0.076	-0.097	-0.167	-0.100	1

Highest coefficients	0.23

4.2: Regression Fix Effect and Random Effect Model Test

The first thing to consider is which model to use for each of the regressions; this can be easily tested using Likelihood ratio fixed effect test and the Hausman test. This is completed in Eview by setting either the time or cross-section to Fixed. Then running the Likelihood ratio test this result shows whether to use an OLS model or the fixed or random effect models. If the Likelihood test results returns a null hypothesis H0 then we use the OLS, if the null hypotheses is rejected t we move on to test for the fixed and random effect models.

When the Likelihood fixed effect model is passed then we run the Hausman test start by setting the time or cross-section to Random then run the test this will show if the random effect model or the fixed effect model is most appropriate. When the null hypothesis is accepted we will use the random effect model, when rejected we used the fixed effect model.

ESG

The regression on the independent variables to the ESG disclosure, will be run and then tested, the first test is the likelihood ratio fixed effect test.

Table4.2.1 ESG likelihood Test

Redundant Fixed Effects Tests
Equation: ESGALL
Test period fixed effects

Effects Test	Statistic	d.f.	Prob.
Period F	0.120868	(4,1739)	0.9751
Period Chi-square	0.489521	4	0.9745

The likelihood ratio test (Table 4.2.1) has a *p*-value of 97% so we accept null hypothesis H0, these means that the most appropriate model for the ESG regression is the OLS. If this null hypothesis is not rejected, the data can simply be pooled together and OLS employed.

ROA

The likelihood ratio test results (Table 4.2.2) has a *p*-value less than 1% indicating that we reject the null hypothesis H0 and accept H1 panel data approach. This will then be tested using the Hausman test

Table4.2.2 ROA likelihood Test

Redundant Fixed Effects Tests Equation: FIRMEQ1ROA Test period fixed effects			
Effects Test	Statistic	d.f.	Prob.
Period F	4.674187	(4,1949)	0.0009
Period Chi-square	18.789036	4	0.0009

The Hausman test result (Table 4.2.3) had a *p*- value less than 1% indicating that the random effect model is not appropriate and the fixed effect specification is preferred.

Table4.2.3 ROA HausmanTest

Correlated Random Effects - Hausman Test Equation: FIRMEQ1ROA Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	32.476913	7	0.0000

ROC

The likelihood ratio test results (Table 4.2.4) has a *p*-value greater than 10% indicating that we accept the null hypothesis H0 and reject H1 panel data approach. This mean that the OLS approach will be used.

Table4.2.4 ROC likelihood Test

Redundant Fixed Effects Tests Equation: FIRMEQ2ROC Test period fixed effects			
Effects Test	Statistic	d.f.	Prob.
Period F	1.177187	(4,1756)	0.3189
Period Chi-square	4.753328	4	0.3136

ROE

The likelihood ratio test results (Table 4.2.5) has a *p*-value greater than 10% indicating that we accept the null hypothesis H0 and reject H1 panel data approach. This mean that the OLS approach will be used.

Table 4.2.5 ROE likelihood Test

Redundant Fixed Effects Tests Equation: FIRMEQ3ROE Test period fixed effects			
Effects Test	Statistic	d.f.	Prob.
Period F	0.563782	(4,1933)	0.6890
Period Chi-square	2.275966	4	0.6851

TOBINQ

The likelihood ratio test results (Table 4.2.6) has a *p*-value greater than 10% indicating that we accept the null hypothesis H0 and reject H1 panel data approach. This mean that the OLS approach will be used.

Table 4.2.6 TOBINQ likelihood Test

Redundant Fixed Effects Tests Equation: FIRMEQ4TOBINQ Test period fixed effects			
Effects Test	Statistic	d.f.	Prob.
Period F	1.230539	(4,1952)	0.2958
Period Chi-square	4.963810	4	0.2910

The results are summarised in Table 4.2.7, these are the most appropriate models and the ones I will use in my research for the regression analysis.

Table 4.2.7 Estimation Model test results

Results for the Fixed and Random Test				
ESG	**ROA**	**ROE**	**ROC**	**TOBINQ**
OLS	FIXED	OLS	OLS	OLS

4.3: Summary of Analysis Results

After successfully collecting all the data and testing for the most appropriate regression model the collected results from the regressions have been put together in a table for analysis. The significant results are shown in tables 4.3.1 and 4.3.2 below.

The regression for the ESG has revealed that there are statistically significant coefficient between most of the independent variables and ESG disclosure the dependent variable. The result reveals a lot about the factors that influence the ESG score.

Table 4.3.1 ESG Results

	ESG Disclosure OLS			
	ROA	**ROC**	**ROE**	**TobinQ**
Variable	Coefficient	Coefficient	Coefficient	Coefficient
Performance indicator (ROA/ROE/ROC/TobinQ)	15.88806***	10.83719***	4.336329***	-0.728098***
COUNTRY	1.788601***	1.759646***	1.817281***	1.595821***
INDUSTRY	-0.510503***	-0.566922***	-0.512911***	-0.518663***
BOARDSIZE	0.689106***	0.643554***	0.666483***	0.642245***
INDEPATT	21.48393***	22.23464***	21.39529***	24.84868***
GOVO	57.63101***	53.18346***	56.26375***	55.48978***
PEO	112.8713***	88.72515**	110.5609***	106.8317***
INSO	46.23175***	44.18439**	48.01259***	48.10325***
INDIVIDUALO	-43.25268***	-42.87086***	-41.06881***	-40.21641***
		* p<0.1	** p<0.05	*** p<0.01

- The ESG disclosure was positively correlated to ROA, ROE, ROC, Board size, independent attendance, government ownership, and Pension companies and insurance company ownership.
- The ESG disclosure score was negatively correlated to TOBINQ, INDUSTRY and individual owner.
- The ESG disclosure is also connected to industry and country.

The main variables that are identified as being significant are performance indicators, country, industry, board size, independent director meeting attendance, government, pension, insurance and individual ownership. These results are further analysed in section 4.4.

The performance indicator regression results show there are a large amount of statistical significant coefficients, indicating that there is a strong correlation between the independent variables and the dependent performance indicators.

Table 4.3.2 Performance Indicator Results

	ROA	ROE	ROC	TOBINQ
Variable	Coefficient	Coefficient	Coefficient	Coefficient
ESG	0.000259***	0.001331***	0.000383***	-0.003155**
COUNTRY	-0.004401***	-0.026211***	-0.016327***	-0.146483***
LEVERAGE	-0.001290***	0.000241***	-0.0000328**	-0.000311***
LNMKTCAP	0.001393**	0.001785	0.001349	0.028133***
PCTINDEPDIRECTOR	0.020152***	0.044741**	0.017866**	0.600936***
M BOARDSIZE	-0.001557***	-0.003183*	-0.002056***	-0.029537***
BOARDM	-0.002520***	-0.007196***	-0.002991***	-0.026855***
INDEPATT		0.269558***	0.194674***	2.591676***
ADVO	0.002695	-0.033545	-0.014023*	0.160952**
PEO	-0.070602	0.799199	-0.155	-5.670043**
INDIVIDUALO	0.120179***	0.070902	0.148056***	1.149195**
	Fixed	OLS	OLS	OLS
	* p<0.1	** p<0.05	*** p<0.01	

- ESG is positively correlated to ROA, ROC, ROE and negative to TobinQ.
- There is a positive correlation for board independency and individual ownership.
- There is a negative correlation for board size and number of meetings.

The main variable's that are significant to all the firm performance are ESG, Country, leverage, Independent directors, board size, meeting attendance and individual ownership. These are all consistent except for ESG and Leverage. ESG is positive for all the indictors except for the TOBINQ. Leverage is all negative except the ROE. These results are further analysed in section 4.5.

4.4: Results ESG

This analysis for the connection between the independent variables and ESG was to determine if there is any connection between ESG disclosure and the other independent variable. This will help when reviewing the result of the performance indicators also revealing more about the ESG disclosure, testing hypothesis H4 H5 H6.

Table 4.4.1 ESG Results

ESG	ROA	ROC	ROE	TobinQ
Variable	Coefficient	Coefficient	Coefficient	Coefficient
Performance indicator (ROA/ROE/ROC/TobinQ)	15.88806***	10.83719***	4.336329***	-0.728098***
COUNTRY	1.788601***	1.759646***	1.817281***	1.595821***
INDUSTRY	-0.510503***	-0.566922***	-0.512911***	-0.518663***
LEVERAGE				
LNMKTCAP				
PCTINDEPDIRECTOR				
BOARDSIZE	0.689106***	0.643554***	0.666483***	0.642245***
BOARDM				
INDEPATT	21.48393***	22.23464***	21.39529***	24.84868***
GOVO	57.63101***	53.18346***	56.26375***	55.48978***
ADVO				
PEO	112.8713***	88.72515**	110.5609***	106.8317***
INSO	46.23175***	44.18439**	48.01259***	48.10325***
INDIVIDUALO	-43.25268***	-42.87086***	-41.06881***	-40.21641***
	OLS	* p<0.1	** p<0.05	*** p<0.01

The results show that ESG disclosure score is strongly connected to the ownership structure, as it can reflect the firm's policies, regulations or ethics. The ownership by government, pension funds and insurance companies will have different objectives than individual investors, such as sustainability,

diversification, regulation and ethical investments. This is reflected in the correlation of ownership and the ESG score, as the individual owners has a negative affect this could be a focus on profit rather than diversification. The TOBINQ had a negative correlation this could also reflect the need for profit over the levels of disclosure.

There is a strong connection between the ownership and the ESG disclosure, this supports the H4 Hypothesis. Government ownership has a highly positive coefficient at a statistically significant level +53.14***, while individual ownership has a highly negative coefficient at a statistically significant level. The government, pension and insurance companies will require more disclosure from companies that it invests in, whereas individuals might not require this level of disclosure and concentrate more about the returns. The results are interesting because the individual ownership was -42.79*** as this indicates that individual ownership has a negative connection on the levels of ESG disclosure. This is probably reflected in the governments having stricter regulation and the individual focused more on profit rather that disclosure so individual investors are probably not as responsible investors.

There is a significantly positive correlation between the board size and the ESG disclosure, this supports the H6 Hypothesis. The result of +0.689*** for the regression with ROA, this is not as high as some of the other variables such as independent meeting attendance +21.483*** but it is significant. The literature discussed the important characteristic including board size, but there is no research comparing board size to the Bloomberg ESG disclosure score. The findings of this research show that the corporate governance factors that are correlated to ESG disclosure are board size and independent director meeting attendance.

The board size and independent director meeting attendance are positively correlated to the ESG this implies that bigger boards with better independent director attendance lead to more ESG disclosure. This could be because of the corporate governance and the structure of the board, reflect the disclosure system structure. However there is not a statistically significant correlation

between the percentage or independent directors and the ESG disclosure; this means that H5 Hypothesis is not supported.

The literature characterises independent directors as a key part of corporate governance, with research connecting them to the higher levels of voluntary disclosure. García-Meca and Sánchez-Ballesta (2010) findings showed that more independent boards are associated with higher voluntary disclosure. However this papers results show that there is no significant connection between independent directors and ESG disclosure; this is similar to Ho and Tower (2011) who found no significant connection to voluntary disclosure.

The ROA, ROE and ROC are significantly positively correlated to the ESG disclosure; this could reflect that companies with higher returns have better ESG disclosure. However the TobinQ is negatively correlated indicating the market value to book value has a negative effect on the ESG disclosure. This highlights the difference in the firms performance based on returns or market value. ROA is a measure of the overall effectiveness of management in generating returns, whereas TobinQ is a measure of the financial markets value of performance.

Industry and country are connected to ESG but we cannot say how because the variables are dummy variables, so all we can say is that there is a connection between them. This reflects the information gathered from Bloomberg that states that the levels of ESG and ESG disclosure are different for the industry, and is also calculated differently.

These finding show that there is a strong connection between the ESG disclosure score and the performance of the firm, this should lead to more sophisticated models being developed to include more non-financial information. Eccles *et al.*(2011) have predicted that the markets interest in non-financial information will increase exponentially, leading to companies disclosing more information that will lead to more complex model being developed by investors to analyse companies.

ESG Key Points

- The ESG disclosure is positively correlated to government, insurance and pension company ownership, whereas it is negatively correlated to individual ownership. This reflects the importance for ownership on ESG disclosure, this is probably connected to regulations and policies.

- The ESG disclosure is positively correlated to ROA, ROE and ROC, However it is negative to TobinQ. This reflects how ESG disclosure is positively connected to company's returns, but negatively to the market value.

- The ESG disclosure score is connected to the industry and the country. This was mentioned in chapter 2 and 3, as these are important part of the ESG disclosure. Bloomberg also account for the industry when they are calculating the disclosure score.

4.5: Results Firm Performance

The reason that the firm's performance was tested on ROA, ROE, ROC and TOBINQ was to cover possible different aspects of the company performance. ROA, ROE and ROC reflect the return compared to capital, assets and equity which can have different results dependent of the firm's management.

Table 4.5.1 Performance Indicator Results

	ROA	ROE	ROC	TOBINQ
Variable	Coefficient	Coefficient	Coefficient	Coefficient
ESG	0.000259***	0.001331***	0.000383***	-0.003155**
COUNTRY	-0.004401***	-0.026211***	-0.016327***	-0.146483***
INDUSTRY				
LEVERAGE	-0.001290***	0.000241***	-0.0000328**	-0.000311***
LNMKTCAP	0.001393**			0.028133***
PCTINDEPDIRECTOR	0.020152***	0.044741**	0.017866**	0.600936***
M BOARDSIZE	-0.001557***	-0.003183*	-0.002056***	-0.029537***
BOARDM	-0.002520***	-0.007196***	-0.002991***	-0.026855***
INDEPATT		0.269558***	0.194674***	2.591676***
GOVO				
ADVO			-0.014023*	0.160952**
PEO				-5.670043**
INSO				
INDIVIDUALO	0.120179***		0.148056***	1.149195**
	Fixed	OLS	OLS	OLS
	* p<0.1	** p<0.05	*** p<0.01	

The ESG disclosure is significantly positively correlated to ROA, ROE and ROC; however it is significantly negatively correlated with TOBINQ. This indicates that the ESG disclosure is a positive indicator for return which could be linked to the corporate governance and disclosure practices. This might be negative to TOBINQ because some market investor's priority includes ethical investment, so the level of disclosure could influence market investors decisions. This reflects the ESG test from section 4.4, the positive effect on the internal returns of the company but a negative relationship with the market value to book value.

The ownership does not have a large connection to the performance indication except the individual investor that is positively correlated to ROA, ROC and TobinQ. This could indicate the difference in the objective of the owners, individual owners want to maximise profit, however government, pensions and insurance companies want to have sustainably, diversify and improve employment (government).

The regression had an interesting result that the ownership, mainly the individual investors were correlated to the performance indicators. This further shows the difference in the priorities of the investors, the difference between the need for return on investment and the other reasons for investing. This finding in connection with the findings from section 4.4 that individual ownership was negative to ESG disclosure, but is positive to firm performance.

Board size was significantly negatively correlated for all performance indicators, indicating that larger boards must have a negative effect on the firm's performance. This is reflects the finding from the literature review in section 2.1. The empirical evidence appears to support this view, with a multiple studies documenting a significantly negative relation between board size and corporate performance. This was an interesting result, as Fooladi (2011) and Bermig and Frick (2010) found no statistical significant connection, whereas Cater (*et al*., 2003) and Guest (2009) found negative connection. However Eisenberg *et al*. (1998) found evidence of a negative correlation between board size and firm profitability.

This research can further support the negative correlation between board size and firm performance, although board size is positively correlated to ESG disclosure. The board size influence on the company seems complex improving voluntary disclosure but reducing financial performance, this could represent the additional costs involved in both good corporate governance and higher ESG disclosure. Some of the research has reviewed the associated costs with voluntary disclosure, and raised the question does the cost out way the benefits (García-Meca and Sánchez-Ballesta, 2010).

Board meeting per year was significantly negative for all, like the board size and the number of meetings must have a negative effect on performance. This could be an area that is to the performance of the board, maybe the more meets means that there are more problems. Interestingly the independent director meeting attendance was positively correlated. So this could indicate that independent directors have a more positive influence.

The percentage of independent directors was significantly positively correlated to ROA, ROE, ROC and TOBINQ. This means that Independent directors have a positive influence on the firm's performance in all four aspects. This reflects the finding in the literature review from section 2.1. Sami *et al*. (2011), Bonn (2004), Cho and Rui (2007) found a positive correlation between the independent directors and firm performance, however Bhagat and Black, (2001) and Bhagat and Bolton (2008) found a negative correlation.

So this research supports the positive connection of independent directors and firm performance. The independent director attendance like the number of independent directors also has a positive connection of the firm's performance, this could further emphasise the importance of board independence.

The leverage variable is negatively correlated to ROA, ROC and TOBINQ, but Positive for ROE. This will have a connection to the way that the companies used the leverage; ROE is related to equity so more leverage will positively increase the return from the equity. However leverage can have a negative effect on the firm's performance so will have a negative effect on the other indicators

ESG Disclosure, Corporate Governance and Firm Performance:

Empirical evidence from UK, France, Germany, Japan and US markets 2008-2012.

Performance Indicator Key Points

- The ESG disclosure is positively correlated to ROA, ROE, and ROC but negative for TOBINQ. This reflects the ESG test, there is a positive effect on the returns of the company but a negative relationship with the market value to book value (TobinQ).
- The country variable is significantly correlated to firm performance.
- Leverage is negatively correlated to ROA, ROC and TOBINQ Positive ROE.
- The percentage of independent directors was positively correlated to ROA, ROE, ROC and TOBINQ. This means that Independent director have a positive influence on the firm's performance in all four aspects.
- Independent directors meeting attendance positive for all, this is the same as the number of independent directors must have a positive effect on the firm's performance.
- Board size was negatively correlated for all; larger boards appear to have a negative effect on the firm's performance. Some of the empirical evidence supports this view. This could be the board size effect, that implies that larger groups are harder to coordinate and reduced have reduced communication.
- Board meeting attendance was negative for all; the greater number of meets must have a negative effect on performance maybe indicating problems that they are trying to solve.

4.6 Conclusion of Analysis Results

The results from the 4480 observations collected from the five markets have revealed that there is a link between the performance, ownership, board size, industry, country and ESG disclosure. From the above analysis the conclusion is that there is a strong association between the ESG disclosure, corporate governance and firm performance. However the variables can affect performance in different ways, showing that the way the company's performance is measured is important.

Table 4.6.1 Highlights Results

	ROA	ROE	ROC	TOBINQ
Variable	Coefficient	Coefficient	Coefficient	Coefficient
ESG	0.000259***	0.001331***	0.000383***	-0.003155**
COUNTRY	-0.004401***	-0.026211***	-0.016327***	-0.146483***
LEVERAGE	-0.001290***	0.000241***	-0.0000328**	-0.000311***
PCTINDEPDIRECTOR	0.020152***	0.044741**	0.017866**	0.600936***
M BOARDSIZE	-0.001557***	-0.003183*	-0.002056***	-0.029537***
BOARDM	-0.002520***	-0.007196***	-0.002991***	-0.026855***
INDEPATT	0.083735	0.269558***	0.194674***	2.591676***
INDIVIDUALO	0.120179***	0.070902	0.148056***	1.149195**
	Fixed	OLS	OLS	OLS
	* p<0.1 ** p<0.05 *** p<0.01			

There is a strong connection between the ESG disclosure, corporate governance, ownership and firm performance. The key results for the performance indicators are highlighted in table 4.6.1. There is a positive correlation for ESG, independent directors, independent directors meeting attendance and individual ownership. Whereas a negative correlation to leverage, board size and board meetings. The results provide a supporting view for some of the literature but also some conflicts.

Table 4.6.2 ESG Results

ESG	ROA	ROC	ROE	TobinQ
Variable	Coefficient	Coefficient	Coefficient	Coefficient
Performance indicator (ROA/ROE/ROC/TobinQ)	15.88806***	10.83719***	4.336329***	-0.728098***
COUNTRY	1.788601***	1.759646***	1.817281***	1.595821***
INDUSTRY	-0.510503***	-0.566922***	-0.512911***	-0.518663***
BOARDSIZE	0.689106***	0.643554***	0.666483***	0.642245***
INDEPATT	21.48393***	22.23464***	21.39529***	24.84868***
GOVO	57.63101***	53.18346***	56.26375***	55.48978***
PEO	112.8713***	88.72515**	110.5609***	106.8317***
INSO	46.23175***	44.18439**	48.01259***	48.10325***
INDIVIDUALO	-43.25268***	-42.87086***	-41.06881***	-40.21641***
	OLS	* p<0.1	** p<0.05	*** p<0.01

The regression on the ESG disclosure revealed lots of interesting results; there is a strong connection between the performance indicator, country, industry, board size, independent meeting attendance and ownership to ESG disclosure (table 4.6.2). There is a positive correlation between board size, independent meeting attendance and the levels of ESG disclosure. This demonstrates the effect of corporate governance and the companies ESG disclosure levels.

These all have a strong influence on the level of ESG disclosure interestingly the ownership highly negative for the individual owners and highly positive for Government, Pensions and Insurance. This could illustrate rules and regulations that government, pensions and insurance companies follow that positively influence disclosure levels. So individual investors might not require as much disclosure, the literature has discussed how when companies ownership becomes more diverse, the level of information disclosure can increase. The negative result for individual investor might indicate their investment approach, they are concerned most about maximising profit, so might be investing in 'sin stock' or higher performance without concern for the ESG information.

H1: There is a positive relationship between ESG disclosure score and the firm performance.

The results show that the ESG disclosure is positively connected to all the return ratios indicating good performance but negative the market based TobinQ. This supports the H1 hypothesis except for the TobinQ, so the hypothesis is dependent upon the definition of firm performance. This is why I did robust testing, comparing multiple performance indicators, H1 passed for three out of four. This could illustrate that the ESG disclosure affects different aspects of performance, in this case the difference between the internal and market performance ratios.

H2: There is a negative relationship between the board size and board meetings to the firm performance.

Board size and meetings attended are negatively correlated to all indicators, which supports the H2 hypothesis. The literature explains how with larger boards it becomes harder for the CEO to control and the larger groups find it harder to come to a collective decision.

H3: There is a positive relationship between the percentage of independent directors and the firm performance.

Independent director are positively correlated to all the performance indicators, suggesting that they have a positive effect on the company. This supports the H3 hypothesis, reflecting the previous research and the current trend of majority independent boards. The independency of the board will improve the board's objectivity and better allow them to fulfil their goal of connecting the investors' interest with the management.

H4: There is a relationship between the ownership and the ESG disclosure scores.

The results show that the government ownership has a highly positive connection to ESG discloser whereas individual is very negatively correlated. This supports the H4 hypothesis, that there is a relationship between the ownership and the ESG disclosure.

H5: There is a relationship between the percentage of Independent directors and the ESG disclosure scores.

There is not a statistically significant correlation between the percentage or independent directors and the ESG disclosure; this means that H5 Hypothesis is not supported. This means that we accept the null hypothesis.

H6: There is a relationship between the percentage of board size and the ESG disclosure scores.

There is a significantly positive correlation between the board size and the ESG disclosure, this supports the H6 Hypothesis. This is interesting in comparison to the performance indicators that are negatively correlated. This indicates that there is a positive connection between board size and the levels of ESG disclosure, and negative to the firm's performance. This raises the question does the benefits of better governance and disclosure out way the costs.

Table 4.6.3 Hypothesis Result Summary

H1	***Supported***	**H4**	***Supported***
H2	***Supported***	**H5**	***Unsupported***
H3	***Supported***	**H6**	***Supported***

Chapter 5: Conclusion

5.1: Introduction

To conclude this paper has reviewed ESG disclosure and corporate governance factors and how they are connected to the firm's performance. There is a lot of research in corporate governance and firm performance looking at similar factors; however there are not many that look at the Bloomberg ESG disclosure score. This analysis has revealed a lots of interesting results, including statically significant correlations between corporate governance factors, ESG disclosure score and company performance.

The paper used regression analysis on panel data, revealing correlation for several different factors that have been focused on, board size, independent directors and ESG disclosure. This has also highlighted different results compared to the finding from the previous literature so this will be contributing to the current literature. There are also differences in the results for the different performance indicators, demonstrating the need for robust testing.

This dissertation started by critically reviewing the literature on corporate governance, independent directors, board size, ownership ESG and voluntary disclosure. This allowed for the deployment of the research theoretical frame work including the six hypotheses that are tested. The data was collected from the five markets over five years giving 4480 observations, using Eview to run multi-liner regressions to test for the correlation between the dependent and independent variables. Then analysing the result to test the hypothesis and relate the critical literature review to better understand the findings.

The results show that the ESG disclosure is positively connected to all of the return ratios indicating better internal financial performance but negative to the market based performance TobinQ. This still supports the H1 hypothesis for three out of four performance indicators. The relationship with return shows that ESG disclosure has a positive connection on the firm's ability to

affectively gain a high return using the assets, capital and equity. The negative relationship to the TobinQ means that it is negatively connected to the market value. This could mean that the ESG disclosure is a good indicator for return performance, but not for the market performance of a firm.

Company board size and number of meetings per year are negatively correlated to all performance indicators, which supports the H2 hypothesis. The literature explains that when the board size increases it becomes harder for the CEO to control the meetings, also larger groups find it harder to come to a collective decision. This is similar for the number of meeting, indicating that they are coming to effective collective decisions. There is some literature that argues board size effect is only for small firms, as for larger more complex companies they will need a larger board to effective manage the management. This is one of the reasons that large companies are divided into division or sub companies.

Independent directors are positively correlated to all of the performance indicators, suggesting that they have a positive effect on the company. This supports the H3 hypothesis, reflecting the previous research and the current trend of majority independent boards. However there is not a statistically significant correlation between the percentage of independent directors and the ESG disclosure; this means that H5 Hypothesis is not supported. This means that we accept the null hypothesis.

Independent directors have been highly debated in previous research, with many arguments for the positive effect on the corporate governance and company performance. This analysis has found that there is a statically significant positive correlation between percentages of independent director on the board, and firm performance. This supports the previous literature that argues that more board independence improves performance, by effectively developing company's management structure.

The ownership shows that the government ownership has a high positive connection of ESG discloser, whereas individual ownership are very negatively

correlated. This supports the H4 hypothesis, that there is a relationship between the ownership and the ESG disclosure. There is a significantly positive correlation between the board size and the ESG disclosure, this supports the H6 Hypothesis. This is interesting in comparison to the performance indicators results that had board size as negatively correlated. This indicates that there is a positive connection between board size and the levels of ESG disclosure, and negative to the firm's performance. This could have a connection between the associated cost involved in the corporate governance and voluntary disclosure.

The results from the analysis has supported five of the hypothesis and rejected one. This has added to the previous research supporting some findings from the previous research but also revealing results for the new areas of research ESG disclosure scores. The independent director and board size results support some of the previous research. There is a strong indication that ownership is very important to ESG disclosure, with the larger negative correlation for individual put highly positive for government, pension and insurance companies. The results for the Bloomberg ESG disclosure score provide new information for this under researched area, showing a connection to performance indicators, board size, ownership and independent meeting attendance.

The continually evolving financial markets, in the wake of the recent financial crisis have changed the way the modern portfolios are managed. Modern portfolio management has the approach of gaining the highest possible return at the lowest level of risk, creating more complex company evaluation that needs to include more than just traditional indicators. Corporate governance and ESG performance has become an important factor for investors, creating the need for companies to disclose more information. This research has found a positive connection between the ESG disclosure and firm performance, indicating that it is a positive indicator for firm performance except for the market value.

5.2: Recommendation and Further Research

Recommendations

Based on the findings from this research and analysis, the recommendation for the research question does ESG disclosure and corporate governance have a connection to firm performance? This research revealed interesting information that could help companies and investors.

The levels of voluntary ESG disclosure by companies is growing, this is a sign of the increasing importance of the information. The corporations and investors need to start including this information within their business objectives. Companies will gain advantages such as lower costs of capital and better operational reputation, also as this paper shows there is a positive connection between the ESG and the firm's performance. The importance of ESG disclosure is shown in the results of this report, however there is a large cost associated with the levels of disclosure but the literature has mentioned that the regulation on ESG disclosure are increasing, so companies need to get ahead of this as it will make it easier to disclose information later on.

The size of the board is an important factor to consider, this is not to say that every company should have a small board, but there is evidence that shows that larger boards have a negative influence on performance. The optimum board size is a complex decision, as small boards may be more efficient but more complex companies will need bigger boards. Companies will need to consider this factor as well as the negative connection between the number of meeting and performance. This implies that the structure of the board is an important contributor to performance. There is a positive connection between independent directors and performance, this supports the current trend of having majority independent boards. Although there is no fixed board structure this research indicates to avoid large boards and excessive number of meetings per year and to have a high percentage of independent directors.

The investors can use this ESG disclosure measure as a positive indicator on firm performance return but have to consider the effect on the market value. They can also consider the corporate governance factors, as from this research there is a strong connection between them and firm performance. They could develop investment strategies that take into account the changes in the boards that would predict possible changes in the firm's future stability and performance.

The main recommendation is that everyone including the corporations, investors and stake holders need to consider the corporate governance and ESG disclosure. This research has revealed multiple connection between the different factors and performance, this could be used to establish an analysis of the companies stability and potential future performance. This could be further researched to help support or expand the results.

Further Research

The relationship between the board size and performance could be further investigated, with a strong separation between small companies and large complex companies. Do larger companies need larger boards or do larger boards restrict the levels of governance within the organisation? The separation between the small companies and large companies would further the understanding of this relationship.

Independent directors in this research were found to have a positive connection with performance. However the connection between the independent directors and the other factors could be further researched, to identify why they have a positive correlation.

The connection between ESG disclosure and the firms other factors including profit, stock price, dividends and share returns could be researched. This would expand the connection found in this research, maybe expanding upon the negative connection to TobinQ.

How well does the ESG disclosure sore reflect the actual ESG performance? This could be that companies that have good ESG have better disclosure. However companies that would typically have bad ESG would be highly regulated so this might explain the high disclosure.

Reference list

Ammanna, M., Oeschb, D. and Schmidc, M,M. (2011) 'Corporate Governance and Firm Value: International evidence', *Journal of Empirical Finance*, 18, pp.36–55.

Bassen, A. and Kovacs, A. M. (2008) 'Environmental, social and governance key performance indicators from a capital market perspective'. *Zeitschrift für Wirtschafts-und Unternehmensethik*, 9, pp.182-192.

Baltagi, B,H. (2005) 'Economic Analysis of Panel Data', ed. 3, John Wiley & Sons Ltd, Chichester.

Bermig, A. and Frick, B. (2010) 'Board Size, Board Composition, and Firm Performance: Empirical Evidence from Germany', [Online]. Available at SSRN: http://ssrn.com/abstract=1623103. (Accessed: 15 April 2014).

Borokhovich, K. A., Parrino, R. and Trapani, T. (1996) 'Outside directors and CEO selection'. *Journal of Financial and Quantitative Analysis*, *31*(03), 337-355.

Bhagat, S. and Black, B. (2001) 'The Non-Correlation Between Board Independence and Long Term Firm Performance', *Journal of Corporation Law*, pp. 231-274.

Bhagat, S. and Bolton, B. (2008) 'Corporate governance and firm performance'. *Journal of Corporate Finance*, *14*(3), pp.257-273.

Brown, L. D. and Caylor, M. L. (2009) 'Corporate Governance and Firm Operating Performance', *Review of Quantitative Finance and Accounting*, pp. 129-144.

Bonn, I. (2004) 'Board Structure and firm performance: evidence from Australia', *Journal of the Australian and New Zealand Academy of Management* 10 (1), pp. 14-24.

Borokhovich, K. A., Parrino, R. and Trapani, T. (1996) 'Outside directors and CEO selection'. *Journal of Financial and Quantitative Analysis*, *31*(03), pp. 337-355.

Brooks, C. (2008). *Introductory econometrics for finance*. Cambridge.2nd edn. Cambridge: University Press.

Cadman, T. (2011) 'Re-Casting the Frame of Corporate Social Responsibility and Responsible Investment: An Environmental and Social Perspective', [ONLINE]. Available at: SSRN:http://ssrn.com/abstract=1975546 (Accessed: 24 April 2014)

Cho, S. and Rui, O. M. (2009) 'Exploring the effects of China's two-tier board system and ownership structure on firm performance and earnings informativeness'. *Asia-Pacific Journal of Accounting & Economics*, *16*(1), pp. 95-117.

Coles, J.L., Daniel, N.D. and Naveen, L. (2008) 'Boards: does one size fit all?', *Journal of Finance*. Economics. 87, pp.329–356.

Chaghadari, M, F. and Chaleshtori, G, N. (2011) 'Corporate Governance and Firm Performance', *International Conference on Sociality and Economic Development*, 10, pp. 484-489.

Crespí-Cladera, R. and Pascual-Fuster, B. (2013) 'Does the independence of independent directors matter?', *Journal of Corporate Finance.*

Demsetz, H. and Villalonga.B. (2001) 'Ownership structure and corporate performance.' *Journal of corporate finance*, 7(3) .pp.209-233.

Eccles, R. G., Serafeim, G., and Krzus, M. P., (2011), Market Interest in Nonfinancial Information. *Journal of Applied Corporate Finance*, 23, pp. 113–127.

Eisenberg, T., Sundgren. and Wells, M. T. (1998) 'Larger board size and decreasing firm value in small firms', *Journal of Financial Economics*, 48, pp.35-54.

Eng, L.L. and Mak, Y.T. (2003) 'Corporate governance and voluntary disclosure', *Journal of Accounting and Public Policy*, 22 pp. 325–345.

Epps, R. W. and Cereola, S. J. (2008) 'Do institutional shareholders services (ISS) corporate governance ratings reflect a company's operating performance?', *Critical Perspective on Accounting*, 9, pp.1135-1148.

Fama, E. F. and Jensen, M. C. (1983) 'Separation of Ownership and Control', *Journal of Law and Economics*, XXVI.

Fooladi, M. (2012) 'Board Characteristics and Firm Performance' *Journal of Modern Accounting and Auditing,* 8 (5), pp. 100-107.

García-Meca, E. and Sánchez-Ballesta.J .P. (2010) 'The association of board independence and ownership concentration with voluntary disclosure: a meta-analysis.' *European Accounting Review*, 19(3), pp.603-627.

Greenwood, R. and Thesmar, D. (2011) 'Stock Price Fragility', *Journal of Financial Economics*.

Guest, P.M. (2009) 'The Impact of Board Size on Firm Performance: Evidence from the UK', *The European Journal of Finance*, 15, pp. 385-404.

Habbash, M., Lijuan X., Salama, A. and Dixon, R. (2014) 'Are Independent Directors and Supervisory Directors Effective in Constraining Earnings

Management?', *Journal of Finance, Accounting and Management*, 5(1), pp.125-160.

Ho, P.L. and Tower. G. (2011) 'Ownership structure and voluntary disclosure in corporate annual reports of Malaysian listed firms.' *Corporate Ownership and Control,* 8(2), pp. 296-313.

Hong, H. and Kacperczyk, M. (2009) 'The price of sin: The effects of social norms on markets', *Journal of Financial Economics*, 93(1), pp. 15-36.

IFAC (2012) 'Investor Demand for Environmental, Social, and Governance Disclosures', *Implications for Professional Accountants in Business* [ONLINE], http://www.ifac.org/publications-resources/investor-demand-environmental-social-and-governance-disclosures (Accessed: 05 April 2014).

Jensen, M.C. (1993) 'The modern industrial revolution, exit, and the failure of internal control systems'. *The Journal Finance*, 48, pp.831–880.

Koehler, D. A. and Hespenheide, E. J. (2013) 'Finding the Value in Environmental, Social and Governance Performance', *Deloitte Review*, 12, Available at SSRN: http://ssrn.com/abstract=221884 (Accessed: 12 April 2014).

Lipton, M. & Lorsch, J. W. (1992) 'A modest proposal for improved corporate governance'. *The Business Lawyer*, pp. 59-77.

Malik, S.U. (2012) 'Relationship between Corporate Governance Score and Stock Prices: Evidence from KSE- 30 Index Companies', *International Journal of Business and Social Science,* 3, pp.239-249.

Murphy. D. and McGrath. D. (2013) 'ESG reporting – class actions, deterrence, and avoidance', *Sustainability Accounting, Management and Policy Journal*, 4 (2), pp.216 – 235.

Peiris, D. and Evans, J. (2010). 'The relationship between environmental social governance factors and US stock performance'. *Journal of Investing*, *19*(3), PP.104.

Shleifer,A. and Vishny, R. (1997) 'A survey of corporate governance', *Journal of Finance*, pp.737-775.

Sami, H., Wang, J. and Zhou, H. (2011) 'Corporate governance and operating performance and Chinese listed firms', *Journal of International Accounting, Auditing and Taxation*, pp. 106-114.

Tian, G,Y., and Twite,G., (2011), 'Corporate governance, external market discipline and firm productivity', *Journal of Corporate Finance,* 17, pp.403–417.

Xu, X. and Wang. Y. (1999) 'Ownership structure and corporate governance in Chinese stock companies.' *China economic review,* 10(1), pp.75-98.

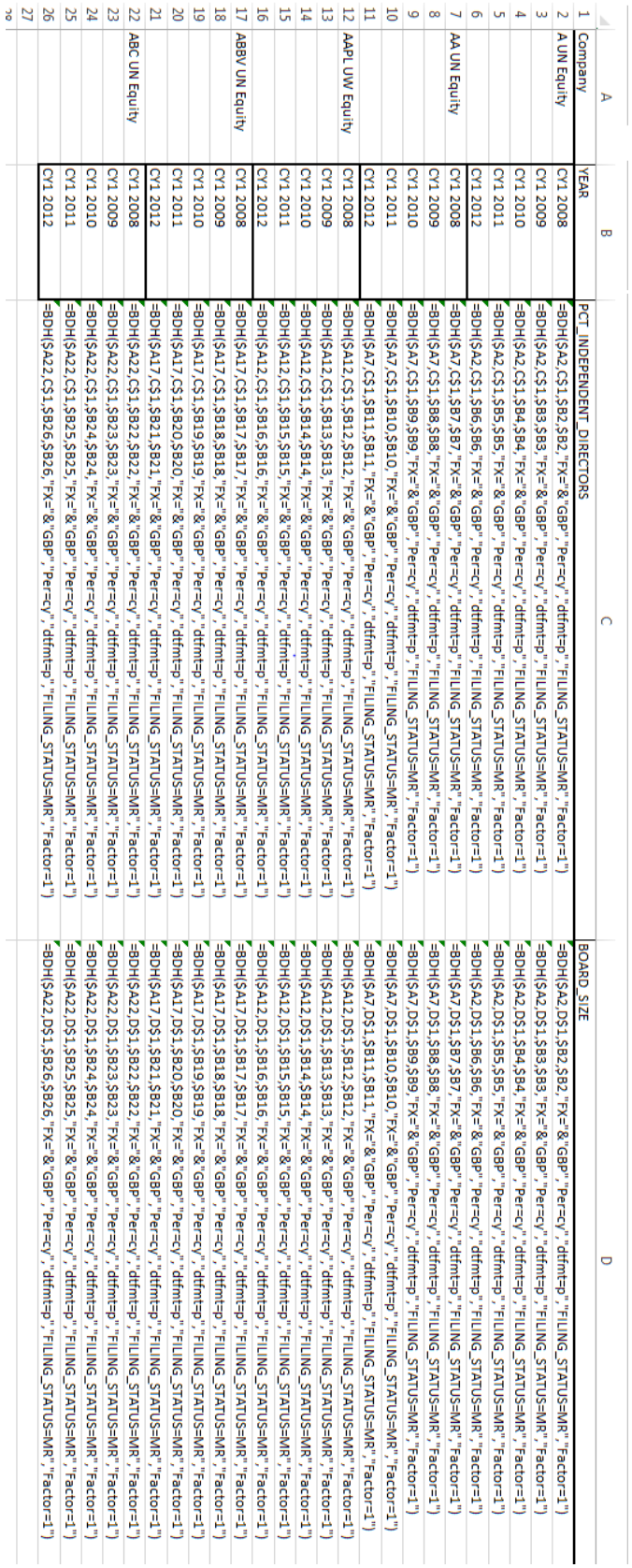
Yermack, D. (1996) 'Higher market valuation of companies with a small board of directors'. *Journal of Financial Economics,* 40, pp.185-211.

Yasser, Q.R., Entebang, H. and Mansor, S.A. (2011) Corporate governance and firm performance in Pakistan: The case of Karachi Stock Exchange (KSE)-30, *Journal of Economics and International Finance,* 3(8), pp. 482-491, Avaliable at: http://www.academicjournals.org/jeif/PDF/pdf%202011/August/Yasser%20et%20al.pdf (Accessed: 12 April 2014).

Young, S. (2013) 'Responsible Investment, ESG, and Institutional Investors in Australia'. *Critical Studies on Corporate Responsibility, Governance and Sustainability*, *5*, pp.61-80.

Appendix

Appendix 1:



	A	B	C	D
1	Company	YEAR	PCT_INDEPENDENT_DIRECTORS	BOARD_SIZE
2	A UN Equity	CY1 2008	=BDH($A2,CS1,$B2,$B2,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A2,DS1,$B2,$B2,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
3		CY1 2009	=BDH($A2,CS1,$B3,$B3,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A2,DS1,$B3,$B3,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
4		CY1 2010	=BDH($A2,CS1,$B4,$B4,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A2,DS1,$B4,$B4,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
5		CY1 2011	=BDH($A2,CS1,$B5,$B5,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A2,DS1,$B5,$B5,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
6		CY1 2012	=BDH($A2,CS1,$B6,$B6,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A2,DS1,$B6,$B6,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
7	AA UN Equity	CY1 2008	=BDH($A7,CS1,$B7,$B7,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A7,DS1,$B7,$B7,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
8		CY1 2009	=BDH($A7,CS1,$B8,$B8,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A7,DS1,$B8,$B8,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
9		CY1 2010	=BDH($A7,CS1,$B9,$B9,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A7,DS1,$B9,$B9,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
10		CY1 2011	=BDH($A7,CS1,$B10,$B10,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A7,DS1,$B10,$B10,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
11		CY1 2012	=BDH($A7,CS1,$B11,$B11,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A7,DS1,$B11,$B11,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
12	AAPL UW Equity	CY1 2008	=BDH($A12,CS1,$B12,$B12,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A12,DS1,$B12,$B12,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
13		CY1 2009	=BDH($A12,CS1,$B13,$B13,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A12,DS1,$B13,$B13,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
14		CY1 2010	=BDH($A12,CS1,$B14,$B14,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A12,DS1,$B14,$B14,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
15		CY1 2011	=BDH($A12,CS1,$B15,$B15,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A12,DS1,$B15,$B15,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
16		CY1 2012	=BDH($A12,CS1,$B16,$B16,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A12,DS1,$B16,$B16,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
17	ABBV UN Equity	CY1 2008	=BDH($A17,CS1,$B17,$B17,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A17,DS1,$B17,$B17,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
18		CY1 2009	=BDH($A17,CS1,$B18,$B18,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A17,DS1,$B18,$B18,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
19		CY1 2010	=BDH($A17,CS1,$B19,$B19,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A17,DS1,$B19,$B19,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
20		CY1 2011	=BDH($A17,CS1,$B20,$B20,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A17,DS1,$B20,$B20,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
21		CY1 2012	=BDH($A17,CS1,$B21,$B21,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A17,DS1,$B21,$B21,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
22	ABC UN Equity	CY1 2008	=BDH($A22,CS1,$B22,$B22,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A22,DS1,$B22,$B22,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
23		CY1 2009	=BDH($A22,CS1,$B23,$B23,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A22,DS1,$B23,$B23,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
24		CY1 2010	=BDH($A22,CS1,$B24,$B24,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A22,DS1,$B24,$B24,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
25		CY1 2011	=BDH($A22,CS1,$B25,$B25,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A22,DS1,$B25,$B25,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
26		CY1 2012	=BDH($A22,CS1,$B26,$B26,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")	=BDH($A22,DS1,$B26,$B26,"FX="&"GBP","Per=cy","dtfmt=p","FILING_STATUS=MR","Factor=1")
27				